

WEST Search History

DATE: Monday, April 12, 2004

| <u>Hide?</u> | <u>Set Name</u> | <u>Query</u> | <u>Hit Count</u> |
|--------------------------|---|--|------------------|
| | <i>DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=NO; OP=ADJ</i> | | |
| <input type="checkbox"/> | L3 | L2 and swallow\$ | 2 |
| <input type="checkbox"/> | L2 | L1 with (antiferroelectric or ferroelectric) | 14 |
| <input type="checkbox"/> | L1 | V-shaped with switching | 215 |

END OF SEARCH HISTORY

```
=> s swallow? tail?
      2278 SWALLOW?
      100083 TAIL?
L1      115 SWALLOW? TAIL?
      (SWALLOW? (W) TAIL?)
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=> s antiferroelectic or ferroelectric
      0 ANTIFERROELECTEIC
      39472 FERROELECTRIC
      4452 FERROELECTRICS
      40606 FERROELECTRIC
      (FERROELECTRIC OR FERROELECTRICS)
      47995 FERROELEC
      5469 FERROELECS
      48922 FERROELEC
      (FERROELEC OR FERROELECS)
      53953 FERROELECTRIC
      (FERROELECTRIC OR FERROELEC)
L2      53953 ANTIFERROELECTEIC OR FERROELECTRIC
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=> s l1 and l2
L3      10 L1 AND L2
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=> dis 1-10 all
```

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L3  ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2004 ACS on STN
AN  2003:701709  CAPLUS
DN  139:343742
ED  Entered STN:  08 Sep 2003
TI  Novel chiral swallow-tailed amide liquid crystals
    possessing antiferroelectricity
AU  Wu, S.-L.; Chen, F.-D.
CS  Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
SO  Liquid Crystals (2003), 30(8), 991-995
    CODEN: LICRE6; ISSN: 0267-8292
PB  Taylor & Francis Ltd.
DT  Journal
LA  English
CC  75-11 (Crystallography and Liquid Crystals)
    Section cross-reference(s): 25, 76
AB  Novel chiral swallow-tailed amide materials,
    N,N-dipropyl-(S)-2-{6-[4-(4-alkoxyphenyl)benzoyloxy]-2-
    naphthyl}propionamides, DPmPBNPA (m = 9-13), were designed and synthesized
    for the study of mesomorphic properties. The materials DPmPBNPA (m =
    9-11) display a monotropic phase sequence of I-SmA*-SmCA*-Cr. The
    antiferroelec. SmCA* phase for the materials was characterized by
    microscopic texture, switching behavior, dielec. permittivity and
    electrooptical response. The measured maximum Ps values in the SmCA* phase
    of the materials are in the range 80-87 nC cm-2.
ST  antiferroelec liq crystal chiral swallow tailed amide
    prepn property; alkoxyphenylbenzoyloxynaphthylpropionamide antiferroelec
    liq crystal prepn property
IT  Ferroelectric switching
    (antiferroelec.; of chiral swallow-tailed amide
    liquid crystals possessing antiferroelectricity)
IT  Liquid crystals
    (antiferroelec.; preparation and properties of swallow-
    tailed amide liquid crystals possessing antiferroelectricity)
IT  Antiferroelectric materials
    (liquid-crystal; preparation and properties of swallow-
    tailed amide liquid crystals possessing antiferroelectricity)
IT  Antiferroelectricity
    (of chiral swallow-tailed amide liquid crystals)
IT  Dielectric constant
```

Electrooptical effect
 (of chiral **swallow-tailed** amide liquid crystals
 possessing antiferroelectricity)

IT Phase transition enthalpy
 (of **swallow-tailed** amide liquid crystals possessing
 antiferroelectricity)

IT Liquid crystals
 (transitions; of **swallow-tailed** amide liquid crystals
 possessing antiferroelectricity)

IT 171482-92-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and demethylation of)

IT 617246-17-0P 617246-18-1P 617246-19-2P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC
 (Process)
 (preparation and liquid crystal properties with antiferroelectricity of)

IT 617246-22-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reaction with (alkoxyphenyl)benzoyl chloride)

IT 617246-20-5P 617246-21-6P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and thermal behavior of)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Booth, C; Liq Cryst 1996, V20, P387 CAPLUS
- (2) Buivyads, M; Liq Cryst 1997, V23, P723
- (3) Chandani, A; Jpn J appl Phys 1985, V27, PL729
- (4) Fukuda, A; J mater Chem 1994, V4, P997 CAPLUS
- (5) Gisse, P; Ferroelectrics 1993, V147, P27 CAPLUS
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- (8) Ikeda, A; Jpn J appl Phys 1993, V32, PL97 CAPLUS
- (9) Kalynas, V; Mol Cryst liq Cryst 1982, V80, P105
- (10) Kusumoto, T; Chem Lett 1990, P523 CAPLUS
- (11) Lee, J; Jpn J appl Phys 1990, V29, P1122 CAPLUS
- (12) Miyasato, K; Jpn J appl Phys 1983, V22, PL661
- (13) Nishiyama, I; J mater Chem 1992, V2, P1015 CAPLUS
- (14) Nishiyama, I; J mater Chem 1993, V3, P169 CAPLUS
- (15) Suzuki, Y; J mater Chem 1996, V6, P753 CAPLUS
- (16) Takanishi, Y; J mater Chem 1992, V2, P71 CAPLUS
- (17) Takanishi, Y; Phys Rev B 1992, V45, P7684 CAPLUS
- (18) Vora, R; Mol Cryst liq Cryst 1981, V67A, P251
- (19) Vora, R; Mol Cryst liq Cryst 1999, V332, P329
- (20) Wu, S; Chem Mater 1999, V11, P852 CAPLUS
- (21) Wu, S; Liq Cryst 1998, V24, P741 CAPLUS
- (22) Wu, S; Liq Cryst 2002, V29, P1355 CAPLUS

L3 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:295966 CAPLUS

DN 139:188651

ED Entered STN: 17 Apr 2003

TI Synthesis and **ferroelectric** properties of chiral **swallow**
-tailed liquid crystals derived from (L)-lactic acid

AU Wu, S.-L.; Lin, C.-Y.

CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan

SO Liquid Crystals (2003), 30(4), 471-477

CODEN: LICRE6; ISSN: 0267-8292

PB Taylor & Francis Ltd.

DT Journal

LA English

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 25, 74, 76

- AB Three homologous series of chiral **swallow-tailed** materials derived from (L)-lactic acid were prepared. Structural effects on the mesomorphic and phys. properties were studied in terms of (i) the variation of nonchiral peripheral length chain, (ii) the variation of **swallow-tailed** groups and straight alkyl chain at the chiral tails, and (iii) lateral halogen substituents in the core of the mols. The mesophases and their corresponding transition temps. were identified by optical polarized microscopy and DSC. The phys. properties of the **ferroelec.** SmC* phases such as switching current, spontaneous polarization and electrooptical response were also measured and compared.
- ST chiral **swallow tailed** liq crystal lactic acid prepn
ferroelec.; electrooptical chiral **swallow tailed** liq crystal lactic acid
- IT Liquid crystals
(chiral smectic C; preparation and properties of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT Liquid crystals
(chiral smectic; preparation and properties of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT Molecular structure-property relationship
(liquid-crystal; of chiral **swallow-tailed** compds. crystals derived from lactic acid)
- IT Electrooptical effect
Ferroelectric switching
Phase transition enthalpy
(of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT Homologous series
(preparation and **ferroelec.** and liquid crystal properties of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT Ferroelectricity
(spontaneous polarization of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT Liquid crystals
(transitions; of chiral **swallow-tailed** liquid crystals derived from lactic acid)
- IT 14180-11-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of)
- IT 53676-04-3P 59748-18-4P 69367-31-3P 69367-32-4P 90850-10-5P
121627-12-1P 578739-40-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of)
- IT 570402-73-2P 578739-41-0P 578739-42-1P 578739-43-2P 578739-45-4P
578739-46-5P 578739-47-6P 578739-48-7P 578739-49-8P 578739-50-1P
578739-51-2P 578739-52-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and **ferroelec.** and liquid crystal properties of chiral **swallow-tailed** compds. derived from lactic acid)
- IT 578739-39-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Booth, C; Liq Cryst 1996, V20, P387 CAPLUS
- (2) Booth, G; Liq Cryst 1996, V28, P815
- (3) Buvnov, A; Mol Cryst liq Cryst 2001, V366, P547

- (4) Chandani, A; Jpn J appl Phys 1988, V27, PL729 CAPLUS
- (5) Chin, E; Mol Cryst liq Cryst 1986, V141, P311 CAPLUS
- (6) Colling, P; Introduction to Liquid Crystals Chemistry and Physics 1998, P70
- (7) Fukuda, A; J mater Chem 1994, V4, P997 CAPLUS
- (8) Hamplova, V; Mol Cryst liq Cryst 1999, V322, P181
- (9) Kaspar, M; Ferroelectrics 1993, V148, P103 CAPLUS
- (10) Kaspar, M; Liq Cryst 1995, V19, P775 CAPLUS
- (11) Kaspar, M; Liq Cryst 1997, V22, P557 CAPLUS
- (12) Kaspar, M; Liq Cryst 2001, V28, P1203 CAPLUS
- (13) Lee, J; Jpn J appl Phys 1990, V29, P1122 CAPLUS
- (14) Miyasato, K; Jpn J appl Phys 1983, V22, PL661
- (15) Parghi, D; Mol Cryst liq Cryst 1999, V332, P313
- (16) Wu, S; J mater Chem 1999, V11, P852 CAPLUS
- (17) Wu, S; Liq Cryst 2002, V29, P39 CAPLUS

L3 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:198315 CAPLUS

DN 139:157325

ED Entered STN: 13 Mar 2003

TI V-shaped switching in **ferroelectric** liquid crystal mixtures induced by an achiral **swallow-tailed** material

AU Wu, S.-L.; Lin, C.-Y.

CS 3rd Sec., Department of Chemical Engineering, Tatung University, Taipei, Taiwan, 104, Peop. Rep. China

SO Liquid Crystals (2003), 30(2), 205-210

CODEN: LICRE6; ISSN: 0267-8292

PB Taylor & Francis Ltd.

DT Journal

LA English

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

AB A new **ferroelec.** liquid crystal, 1-ethylpropyl (S)-2-[2-fluoro-4-(4'-decyloxybiphenylcarbonyloxy) benzoyloxy] propanoate, F, was synthesized and mixed with an achiral **swallow-tailed** material, 2-propylpentyl 4-(4'-nonyloxybiphenyl-4-carbonyloxy) benzoate, P, for the preparation of binary mixts. for the study. The binary mixts. gave a phase sequence SmA*-SmC*-SmX*. The electro-optic response of the mixts. in the **ferroelec.** SmC* phase was investigated. V-shaped switching was observed as the amount of the achiral **swallow-tailed** material became greater than 20 wt %. This result suggests that thresholdless, V-shaped switching in **ferroelec.** liquid crystal mixts. can be achieved by mixing a **ferroelec.** liquid crystal with an achiral **swallow-tailed** compound

ST V shaped switching **ferroelec** liq crystal achiral mixt

IT Phase transition
(V-shaped switching in **ferroelec.** liquid crystal mixts. induced by achiral **swallow-tailed** material)

IT Liquid crystals
(**ferroelec.**; V-shaped switching in **ferroelec.** liquid crystal mixts. induced by achiral **swallow-tailed** material)

IT **Ferroelectric** materials
(liquid-crystal; V-shaped switching in **ferroelec.** liquid crystal mixts. induced by achiral **swallow-tailed** material)

IT Electrooptical effect
(switching; V-shaped switching in **ferroelec.** liquid crystal mixts. induced by achiral **swallow-tailed** material)

IT 570402-75-4P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); PROC (Process)

(V-shaped switching in **ferroelec.** liquid crystal mixts. induced

by achiral **swallow-tailed** material)

IT 570402-73-2P 570402-74-3P
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
 (V-shaped switching in **ferroelec.** liquid crystal mixts. induced by achiral **swallow-tailed** material)

IT 65145-13-3P, 2-Fluoro-4-hydroxybenzoic acid 90850-10-5P, 2-Ethylpropyl (S)-lactate 570402-70-9P 570402-71-0P 570402-72-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of **ferroelec.** liquid crystal)

IT 79-33-4, L-Lactic acid, reactions 112-29-8, 1-Bromodecane 405-04-9, 4-Cyano-2-fluorophenol 584-02-1, 3-Pentanol 1972-28-7, Diethyl azodicarboxylate 58574-03-1, 4'-Hydroxybiphenyl-4-carboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **ferroelec.** liquid crystal)

IT 69367-32-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of **ferroelec.** liquid crystal)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Booth, G; Liq Cryst 1996, V28, P815
- (2) Chandani, A; Jpn J appl Phys 1988, V27, PL729 CAPLUS
- (3) Chandani, A; Liq Cryst 1999, V26, P167 CAPLUS
- (4) Chin, E; Mol Cryst liq Cryst 1986, V141, P311 CAPLUS
- (5) Fukuda, A; Mol Cryst liq Cryst 1997, V303, P379 CAPLUS
- (6) Fukuda, A; Mol Cryst liq Cryst 1999, V328, P1 CAPLUS
- (7) Gary, G; Mol Cryst liq Cryst 1981, V67, P1
- (8) Inui, S; J mater Chem 1996, V6, P671 CAPLUS
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- (12) Park, B; Jpn J appl Phys 1999, V38, P1474 CAPLUS
- (13) Rudquist, P; J mater Chem 1999, V9, P1257 CAPLUS
- (14) Seomun, S; Jpn J appl Phys 1997, V36, P3586 CAPLUS
- (15) Seomun, S; Jpn J appl Phys 1998, V37, PL691 CAPLUS
- (16) Seomun, S; Liq Cryst 1999, V26, P151 CAPLUS
- (17) Seomun, S; Mol Cryst liq Cryst 1997, V303, P181 CAPLUS
- (18) Wu, S; Chem Mater 1999, V11, P852 CAPLUS
- (19) Wu, S; Liq Cryst 2002, V29, P39 CAPLUS
- (20) Wu, S; Liq Cryst 2002, V29, P39 CAPLUS

L3 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:110581 CAPLUS

DN 138:245994

ED Entered STN: 13 Feb 2003

TI Synthesis and mesomorphic properties of chiral liquid crystals derived from (S)-lactic acid with 3-pentanol

AU Wu, S.-L.; Lin, C.-Y.

CS Dep. of Chem. Eng., Tatung Univ., Taipei, 104, Taiwan

SO Liquid Crystals (2002), 29(12), 1575-1580

CODEN: LICRE6; ISSN: 0267-8292

PB Taylor & Francis Ltd.

DT Journal

LA English

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 25, 74, 76

AB The chiral **swallow-tailed** liquid crystals, 1-ethylpropyl (R)-2-[4-(4'-alkoxybiphenylcarbonyloxy)phenoxy]propionates. EPmPBPP (m = 8-12), were prepared by using chiral (S)-lactic acid with 3-pentanol as starting materials. Mesophases and their corresponding transition temps. were determined by polarizing microscopic textures and DSC. All the chiral

materials exhibited enantiotropic BP, N*, TGBA*, SmA*, and SmC* phases. Spontaneous polarization, dielec. constant and electrooptical response for the materials in the **ferroelec.** SmC* phase were studied. The electrooptical response of transmittance vs. applied voltage obtained from the **ferroelec.** phase of material EPmnPBPP (m = 10) displayed V-shaped switching, while that of other materials displayed the typical characteristics of **ferroelec.** hysteresis switching or U-shaped switching.

- ST mesomorphism chiral liq crystal ethylpropyl alkoxybiphenylcarbonyloxyphenoxypropionate deriv
- IT Liquid crystals
(**ferroelec.**; synthesis and mesomorphic properties of chiral ethylpropyl [(alkoxybiphenylcarbonyloxy)phenoxy]propionate derivs.)
- IT **Ferroelectric** materials
(liquid-crystal; synthesis and mesomorphic properties of chiral ethylpropyl [(alkoxybiphenylcarbonyloxy)phenoxy]propionate derivs.)
- IT Dielectric constant
Electrooptical effect
Ferroelectric switching
Ferroelectricity
Phase transition enthalpy
(of chiral ethylpropyl [(alkoxybiphenylcarbonyloxy)phenoxy]propionate derivative liquid crystals)
- IT Liquid crystals
(transitions; of chiral ethylpropyl [(alkoxybiphenylcarbonyloxy)phenoxy]propionate derivs.)
- IT 501949-48-0P 501949-49-1P 501949-50-4P 501949-51-5P 501949-52-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal and **ferroelec.** and dielec. properties of)
- IT 130771-49-2P, 4-Hydroxyphenyl 4'-decyloxybiphenyl-4-carboxylate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with ethylpropyl lactate)
- IT 90850-10-5P, 2-Ethylpropyl (S)-lactate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with hydroxyphenyl alkoxybiphenylcarboxylates)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Booth, C; Liq Cryst 1996, V20, P387 CAPLUS
- (2) Bubnov, A; Mol Cryst liq Cryst 2001, V366, P547 CAPLUS
- (3) Cepic, M; Ferroelectrics 1994, V147, P179
- (4) Chandani, A; Jpn J appl Phys 1988, V27, P729
- (5) Chandani, A; Liq Cryst 1999, V26, P167 CAPLUS
- (6) Chandani, A; Mol Cryst liq Cryst 1998, V322, P337 CAPLUS
- (7) Fukuda, A; Mol Cryst liq Cryst 1997, V303, P379 CAPLUS
- (8) Hamplova, V; Mol Cryst liq Cryst 1999, V322, P181
- (9) Inui, S; J mater Chem 1996, V6, P71
- (10) Kaspar, M; Ferroelectrics 1993, V148, P103 CAPLUS
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- (14) Lee, J; Jpn J appl Phys 1990, V29, P1122 CAPLUS
- (15) Mistunobu, O; Bull chem Soc Jpn 1967, V40, P2380
- (16) Miyasato, K; Jpn J appl Phys 1983, V22, PL661
- (17) Saishu, T; SID'96 1996, V28, P4
- (18) Seomun, S; Jpn J appl Phys 1997, V36, P3586 CAPLUS
- (19) Seomun, S; Liq Cryst 1999, V26, P151 CAPLUS
- (20) Seomun, S; Mol Cryst liq Cryst 1997, V303, P181 CAPLUS
- (21) Wu, S; J mater Chem 1999, V11, P852 CAPLUS
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L3 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:120710 CAPLUS
 DN 136:333041
 ED Entered STN: 15 Feb 2002
 TI V-shaped switching in binary mixtures of an achiral **swallow-tailed** material with the antiferroelectric liquid crystal (S)-MHPOBC
 AU Wu, S. L.; Chiang, C. T.
 CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
 SO Liquid Crystals (2002), 29(1), 39-45
 CODEN: LICRE6; ISSN: 0267-8292
 PB Taylor & Francis Ltd.
 DT Journal
 LA English
 CC 75-11 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 74, 76
 AB An achiral **swallow-tailed** material, 2-propylpentyl 4-(4'-decyloxybiphenyl-4-carboxyloxy)benzoate, p, showing SmA and SmCalt phases was prepared for mixing (by weight%) with an antiferroelec. liquid crystal, (S)-MHPOBC, m, for the study. The binary mixture p15/m85 using (S)-MHPOBC (85%) as a host doped with achiral material (15%) resulted in a phase sequence SmA-SmC*-SmCA*. The electrooptic response of this mixture in the **ferroelec.** SmC* phase displayed V-shaped switching, while that in the antiferroelec. SmCA* phase displayed a double hysteresis switching. The mixture p85/m15 possessed SmA* and SmCA* phases; V-shaped switching was found in the antiferroelec. SmCA* phase of this mixture. These optical phenomena implied that a binary mixture containing a larger amount of achiral **swallow-tailed** material and/or possessing relatively lower polarization favors the occurrence of V-shaped switching in the antiferroelec. phase. The results of this work also suggested that thresholdless V-shaped switching in chiral smectic liquid crystals can be achieved by mixing an achiral **swallow-tailed** material with an antiferroelec. liquid crystal.
 ST switching binary mixt achiral **swallow tailed** antiferroelec liq crystal
 IT Liquid crystals
 (antiferroelec.; V-shaped switching in binary mixts. of achiral **swallow-tailed** material with antiferroelec. liquid crystal (S)-MHPOBC)
 IT Antiferroelectric materials
 (liquid-crystal; V-shaped switching in binary mixts. of achiral **swallow-tailed** material with antiferroelec. liquid crystal (S)-MHPOBC)
 IT **Ferroelectric** switching
 Optical transmission
 (of MHPOBC-propylpentyl (decyloxybiphenylcarboxyloxy)benzoate binary liquid crystal mixts.)
 IT Optical refraction
 (schlieren; of MHPOBC-propylpentyl (decyloxybiphenylcarboxyloxy)benzoate binary liquid crystal mixts.)
 IT 412955-92-1P
 RL: MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (V-shaped switching in binary mixts. of achiral **swallow-tailed** material with antiferroelec. liquid crystal (S)-MHPOBC)
 IT 112901-67-4, (S)-MHPOBC
 RL: PRP (Properties)
 (V-shaped switching in binary mixts. of achiral **swallow-tailed** material with antiferroelec. liquid crystal (S)-MHPOBC)
 RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Blinc, R; Condens matter News 1991, V1, P17 CAPLUS
 (2) Booth, C; Liq Cryst 1996, V20, P387 CAPLUS

- (3) Chandani, A; Jpn J appl Phys 1988, V27, PL729 CAPLUS
- (4) Chandani, A; Jpn J appl Phys 1989, V28, PL1265 CAPLUS
- (5) Chandani, A; Liq Cryst 1999, V26, P167 CAPLUS
- (6) Cladis, P; Liq Cryst 1993, V14, P1327 CAPLUS
- (7) Fukuda, A; J mater Chem 1994, V4, P997 CAPLUS
- (8) Fukuda, A; Mol Cryst liq Cryst 1997, V303, P379 CAPLUS
- (9) Fukuda, A; Mol Cryst liq Cryst 1999, V328, P1 CAPLUS
- (10) Gisse, P; Ferroelectrics 1993, V147, P27 CAPLUS
- (11) Goodby, J; J mater Chem 1991, V1, P307 CAPLUS
- (12) Inui, S; J mater Chem 1996, V6, P671 CAPLUS
- (13) Lee, J; Jpn J appl Phys 1990, V29, P1122 CAPLUS
- (14) Miyasato, K; Jpn J appl Phys 1983, V22, PL661
- (15) Nishiyama, I; Adv Mater 1994, V6, P966 CAPLUS
- (16) Nishiyama, I; J mater Chem 1992, V2, P1015 CAPLUS
- (17) Ouchi, Y; J mater Chem 1995, V5, P2297 CAPLUS
- (18) Robinson, W; Ferroelectrics 1996, V178, P237 CAPLUS
- (19) Rudquist, P; J mater Chem 1999, V9, P1257 CAPLUS
- (20) Seomun, S; Jpn J appl Phys 1997, V36, P3586 CAPLUS
- (21) Seomun, S; Jpn J appl Phys 1998, V37, PL691 CAPLUS
- (22) Seomun, S; Liq Cryst 1999, V26, P151 CAPLUS
- (23) Seomun, S; Mol Cryst liq Cryst 1997, V303, P181 CAPLUS
- (24) Wu, S; Chem Mater 1999, V11, P852 CAPLUS

L3 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:764222 CAPLUS

DN 130:45407

ED Entered STN: 07 Dec 1998

TI Antiferroelectric liquid crystal composition for display device
fabrication

IN Matsumoto, Takahiro; Johno, Masahiro; Yui, Tomoyuki; Motoyama, Yuki

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C09K019-20

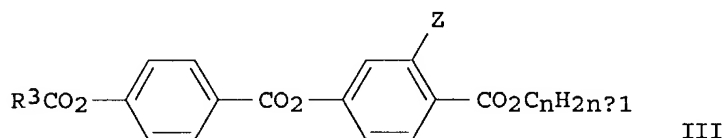
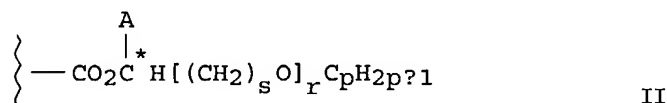
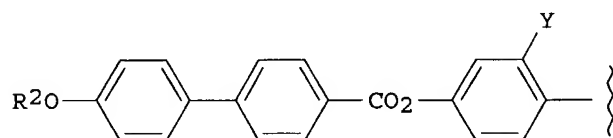
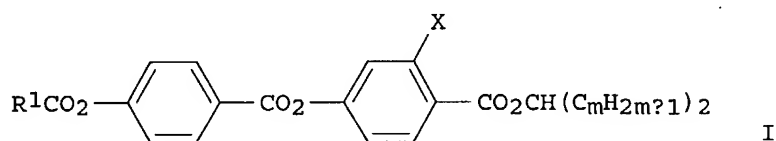
ICS C09K019-02

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|------------------|----------|
| | ----- | --- | ----- | ----- | ----- |
| PI | EP 879869 | A1 | 19981125 | EP 1998-109100 | 19980519 |
| | EP 879869 | B1 | 20001227 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | TW 473537 | B | 20020121 | TW 1998-87107707 | 19980519 |
| | JP 11035941 | A2 | 19990209 | JP 1998-139994 | 19980521 |
| | US 6001278 | A | 19991214 | US 1998-83542 | 19980522 |
| PRAI | JP 1997-132485 | A | 19970522 | | |
| OS | MARPAT 130:45407 | | | | |
| GI | | | | | |



AB An antiferroelec. liquid crystal composition for display device fabrication comprises a **swallow-tailed** compound of the formula I (R_1 = C₄₋₉ alkyl; X = H or F; m = 2 or 3), an antiferroelec. liquid crystal compound of the formula II (R_2 = C₆₋₁₂ alkyl; Y = H or F; A = CH₃ or CF₃; r = 0 or 1 provided that r = 0 and p = an integer of 4-10 when A = CH₃, p = an integer of 6-8 when A = CF₃ and r = 0, and s = an integer of 5-8 and p = an integer of 2 or 4 when A = CF₃ and r = 1; C* = an asym. carbon atom), and a Ph ester compound of the formula III (R_3 = C₅₋₁₀ alkyl; Z = H or F; n = an integer of 5-10). The above antiferroelec. liquid crystal composition has an antiferroelec. phase in a broad temperature range and a high response time I in the transition from an antiferroelec. state to a **ferroelec.** state and a proper response time II in the transition from a **ferroelec.** state to an antiferroelec. state.

ST antiferroelec liq crystal compn electrooptical display

IT Liquid crystal displays

(antiferroelec. liquid crystal compns. containing swallow-tailed compds. for)

IT 216571-73-2

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(antiferroelec. liquid crystal composition for electrooptical display

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Mitsubishi Gas Chemical Co; EP 0497297 A 1992 CAPLUS
(2) Mitsubishi Gas Chemical Co; EP 0718274 A 1996 CAPLUS
(3) Mitsubishi Gas Chemical Co; EP 0829468 A 1998 CAPLUS

L3 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:418402 CAPLUS

DN 125:128364

ED Entered STN: 17 Jul 1996

TI Perfluorinated swallow-tailed compounds - in search
for achiral ferroelectric phases

AU Dietzmann, E.; Weissflog, W.; Markscheffel, S.; Jakli, A.; Lose, D.;
Diele, S.

CS Max-Planck-Res. Group, Liquid Crystalline Systems, Halle, 06108, Germany

SO Ferroelectrics (1996), 180(1-4, Proceedings of the Fifth International Conference on Ferroelectric Liquid Crystals, 1995, Pt. 3), 341-354

CODEN: FEROA8; ISSN: 0015-0193

PB Gordon & Breach

DT Journal

LA English

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 25, 73, 76

AB The authors synthesized **swallow-tailed** compds., A and B, containing fluorinated alkyl chains in different terminal positions and dipoles in opposite directions. An increase of the clearing points and a stabilization of the smectic phases compared to the nonfluorinated **swallow-tailed** compds. appeared. The authors mixed A and B to design dimer pairs AB with the dipole in one direction. X-ray studies were done to prove the incompatibility of the different chemical segments. Dielec. and electrooptical measurements were also carried out to find hints for a **ferroelec.** behavior.

ST perfluorinated **swallow tailed** compd mesomorphism
ferroelectricity

IT Dielectric constant and dispersion

Electrooptical effect

Ferroelectricity

(of perfluorinated **swallow-tailed** compound liquid
crystal mixts.)

IT Liquid crystals

(perfluorinated **swallow-tailed** compds.; preparation and
properties in pure and possible achiral **ferroelec.** phases in
mixts. of)

IT 179817-86-8P 179817-87-9P 179817-88-0P 179817-89-1P 179817-90-4P
179817-91-5P

RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN
(Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation, liquid crystal properties, and dielec. and electrooptical
properties of)

L3 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:215419 CAPLUS

DN 124:303204

ED Entered STN: 16 Apr 1996

TI Achiral **swallow-tailed** materials with
'antiferroelectric-like' structure and their potential use in
antiferroelectric mixtures

AU Booth, Christopher J.; Dunmur, David A.; Goodby, John W.; Haley, Julie;
Toyne, Kenneth J.

CS School Chemistry, Univ. Hull, Hull, HU6 7RX, UK

SO Liquid Crystals (1996), 20(4), 387-92

CODEN: LICRE6; ISSN: 0267-8292

PB Taylor & Francis

DT Journal

LA English

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 74, 76

AB Achiral '**swallow-tailed**' liquid crystalline materials are known to give alternating-tilt smectic C phases (SCalt) which have structural similarities to the chiral antiferroelec. phases denoted as SCA*. This paper describes the synthesis and characterization of three achiral branched alkyl 4-(4'-dodecyloxybiphenyl-4-carboxyloxy)-3-fluorobenzoates. Optical microscopy and DSC confirm that these materials show SCalt and overlying SA phases. The compds. were studied as potential hosts which could be doped with a chiral **ferroelec.** liquid crystal so as to provide a viable antiferroelec. mixture. These studies (microscopy and differential scanning calorimetry), to characterize the properties of the mixts., show that antiferroelec. phases are induced. However, switching studies show that the antiferroelec. phases are extremely stable, a property which is almost certainly a consequence of the length of the lateral branching groups (Et, Pr and butyl).

ST **swallow tailed** antiferroelectriclike mesophase alkyl
dodecyloxybiphenylcarbonyloxyfluorobenzoate

IT Liquid crystals
(alkyl (dodecyloxybiphenylcarbonyloxy)fluorobenzoate; preparation and
properties of)

IT Ferroelectricity
Heat of transition
(of alkyl (dodecyloxybiphenylcarbonyloxy)fluorobenzoate liquid crystals
and their binary mixts. with fluoroctyl (dodecyloxybiphenylcarbonyloxy
)fluorobenzoate)

IT 175237-34-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(liquid crystal transition temps. and phase assignments and enthalpies of
antiferroelec. binary mixts. of alkyl (dodecyloxybiphenylcarbonyloxy)fl
uorobenzoate with)

IT 175887-46-4P 175887-47-5P 175887-48-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN
(Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and antiferroelec.-like structure and liquid crystal properties
of)

L3 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:36494 CAPLUS
DN 124:161107
ED Entered STN: 18 Jan 1996
TI Effect of the terminal branching structure of some liquid-crystalline
biphenyl carboxylates on the stability of the antiferroelectric phase
AU Ouchi, Yukio; Yoshioka, Yasue; Ishii, Hisao; Seki, Kazuhiko; Kitamura,
Masato; Noyori, Ryoji; Takanishi, Yoichi; Nishiyama, Isa
CS Department of Chemistry, Nagoya University, Nagoya, 464-01, Japan
SO Journal of Materials Chemistry (1995), 5(12), 2297-304
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25, 76

AB Three different series of smectic liquid-crystalline biphenyl carboxylates were
prepared and their smectic properties studied. The 'lateral' alkyl chain at
the branching C was varied from Me to hexyl for the homologous series of
4-(1-alkylheptyloxycarbonyl)phenyl 4'-octyloxybiphenyl-4-carboxylates
(series A). A smectic phase which has the same structure as the
antiferroelec. phase (SCA*) or 'anticlinic' phase (SCA') was observed for all
the members of the series except the pentyl homolog. The smectic layer
thicknesses for the homologous series increase as ascending the 'lateral'
alkyl chain, indicating that the 'lateral' alkyl group of the series is in
fact directed along the mol. long axis to some extent, which can occur if
the mol. has a 'bent' structure. A 'swallow-tailed'
compound, 4-(1-propylbutyloxycarbonyl)phenyl 4'-octyloxybiphenyl-4-
carboxylate, and the related 'ring-tailed' compds., 4-(1-
cycloalkoxycarbonyl)phenyl 4'-octyloxybiphenyl-4-carboxylates, were also
prepared (series B). The **swallow-tailed** compound showed a
SCA' phase whereas the related ring-tailed compds. exhibited an ordinary
SC phase, indicating that steric interactions via the terminal alkyl
chains stabilize the SCA' phase. The biphenyl carboxylates possessing a
2-alkyloctyl group at the branching chiral center, i.e.,
4-(2-methylalkyloxycarbonyl)phenyl 4'-octyloxybiphenyl-4-carboxylates
(series C), exhibit no SCA* phase.

ST biphenyl carboxylate liq crystal antiferroelec phase
IT Homologous series
(of biphenyl carboxylate liquid crystals)

IT Liquid crystals
(antiferroelec., effect of terminal branching structure of biphenyl

carboxylates on stability of)

IT **Ferroelectric** substances
(antiferroelec. liquid crystals, effect of terminal branching structure of biphenyl carboxylates on stability of)

IT Liquid crystals
(smectic, preparation and phase behavior of biphenyl carboxylate)

IT 173482-57-0P 173482-58-1P 173482-59-2P 173482-60-5P 173482-61-6P
173482-62-7P 173482-63-8P 173482-64-9P 173482-65-0P 173482-66-1P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal properties of)

L3 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:30426 CAPLUS
DN 118:30426
ED Entered STN: 24 Jan 1993
TI A non-chiral **swallow-tailed** liquid crystal exhibiting a smectic C phase that has an antiferroelectric structure
AU Nishiyama, Isa; Goodby, John W.
CS Sch. Chem., Univ. Hull, Hull, HU6 7RX, UK
SO Journal of Materials Chemistry (1992), 2(10), 1015-23
CODEN: JMACEP; ISSN: 0959-9428
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
AB Antiferroelec. smectic liquid-crystalline materials have recently been shown to be of use in display devices where they show tristable switching behavior. Most liquid-crystalline materials that exhibit antiferroelec. properties are, however, highly chiral and therefore have helical macrostructures. This helical ordering is undesirable in the construction of display devices. The liquid-crystalline properties were determined of a nonchiral material which apparently exhibits a smectic phase that has antiferroelec.-like layer ordering. As the material is nonchiral, it does not possess a helical macrostructure, and therefore could be of value as a suitable host for antiferroelec. mixts. Probably the formation of an antiferroelec. structure is due to the presence of dimeric mol. species. This possibility allows one to speculate on other structures for mesophases that might be found in chiral liquid-crystalline systems.

ST mesomorphism antiferroelec propylbutyl nonyloxyphenylpropioloyloxybiphenyl carboxlate

IT Liquid crystals
(antiferroelec., smectic C, propylbutyl nonyloxyphenylpropioloyloxybiphenylcarboxlate, preparation and properties of)

IT **Ferroelectric** substances
(antiferroelec. liquid crystals, propylbutyl nonyloxyphenylpropioloyloxybiphenylcarboxlate, preparation and properties of)

IT **Ferroelectric** substances
(antiferroelec. liquid crystals, smectic C, propylbutyl nonyloxyphenylpropioloyloxybiphenylcarboxlate, preparation and properties of)

IT Liquid crystals
(smectic C, antiferroelec., propylbutyl nonyloxyphenylpropioloyloxybiphenylcarboxlate, preparation and properties of)

IT 145163-46-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(liquid crystal, preparation and properties and antiferroelec. structure of)

IT 145163-43-5P 145163-45-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of)

IT 145163-44-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reduction of)